

LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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2	8	9	LICENSEE CODE					14	15	LICENSE NUMBER										25	26	LICENSE TYPE					30	57	CAT	58

CON'T

REPORT SOURCE 1 6 0 5 0 0 0 3 1 1 7 1 2 0 7 8 3 8 1 2 3 0 8 3 9

60 61 DOCKET NUMBER 69 74 EVENT DATE 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

On December 7, 1983, during a maintenance shutdown, Channel 2A SEC was inadvertently actuated while testing, causing 2A Vital Bus to be de-energized. Technical Specification Action Statement 3.8.2.2 was entered. The bus was re-energized and loads were restored. Action Statement 3.8.2.2 was terminated within 47 minutes. 2B and 2C Vital Buses remained energized throughout the occurrence. No undue risk to the health or safety of the public was involved. The event constituted operation in a degraded mode permitted by a limiting condition for operation and is reportable in accordance with Technical Specification 6.9.1.9.b.

TECHNICAL SPECIFICATION 0.9.1.9.D.

SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE						COMP. SUBCODE		VALVE SUBCODE			
0	9	E	B	A	C	Z	Z	Z	Z	Z	Z	Z	Z				
7	8	9	10	11	12	13	14	15	16	17	18	19	20				
LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.							
17	8	3	0	6	1	/	0	3	L	0							
21	22	23	24	25	26	27	28	29	30	31	32						
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER	
H	Z	Z	Z	Z	Z	0	0	0	0	Y	N	Z	Z	9	9	9	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | Testing personnel reversed the polarity of the leads while connecting a dual-trace

1 1 | oscilloscope to relay XK49 in 2A SEC. This actuated various relays resulting in the

1 2 | de-energization of the bus. Personnel involved were counseled.

1 3 |

1 4 |

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

FACILITY STATUS (1) 5 (28) G (29) 0 0 0 (30) NA (31) C (32) Operator Observation

ACTIVITY CONTENT (1) 6 (33) Z (34) Z (35) NA (36) NA

RELEASED OF RELEASE (1) 6 (33) Z (34) Z (35) NA (36) NA

AMOUNT OF ACTIVITY (35) NA

LOCATION OF RELEASE (36) NA

PERSONNEL EXPOSURES										
NUMBER		TYPE		DESCRIPTION (39)						
1	7	0	0	0	(37)	Z	(38)	NA		

	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	
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7 8 9 11 12
LOSS OF OR DAMAGE TO FACILITY (43)
TYPE DESCRIPTION

1 9 2 42 NA
7 8 9 10
PUBLCITY 8401130320 831230
NRC USE ONLY

ISSUED DESCRIPTION (45) PDR ADOCK 05000311
 2 0 N 44 NA S PDR
 7 8 9 10 68 69 8

NAME OF PREPARER

J. L. Rupp

PHONE: (609) 339-4369

NRC USE ONLY

017-928



Public Service Electric and Gas Company P.O. Box E Hancocks Bridge, New Jersey 08038

Salem Generating Station

December 30, 1983

Dr. Thomas E. Murley
Regional Administrator
USNRC
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Dr. Murley:

LICENSE NO. DPR-75
DOCKET NO. 50-311
REPORTABLE OCCURRENCE 83-061/03L

Pursuant to the requirements of Salem Generating Station Unit No. 2, Technical Specifications, Section 6.9.1.9.b, we are submitting Licensee Event Report for Reportable Occurrence 83-061/03L. This report is required within thirty (30) days of the occurrence.

Sincerely yours,

J. M. Zupko, Jr.
General Manager -
Salem Operations

JR:k11 *JP*

CC: Distribution

Report Number: 83-061/03L

Report Date: 12-30-83

Occurrence Date: 12-07-83

Facility: Salem Generating Station Unit 2
Public Service Electric & Gas Company
Hancock's Bridge, New Jersey 08038

IDENTIFICATION OF OCCURRENCE:

Electrical Power Systems - 2A Safeguards Equipment Control -
Inadvertent Actuation

This report was initiated by Incident Report 83-224

CONDITIONS PRIOR TO OCCURRENCE:

Mode 5 - Rx Power 000 % - Unit Load 0000 Mwe

DESCRIPTION OF OCCURRENCE:

At 1344 hours, December 7, 1983, during a maintenance shutdown, a Channel 2A SEC actuation stripped various loads from 2A Vital Bus and tripped No. 2A Vital Bus Infeed Breaker 21ASD, de-energizing the bus. Alarms received on the overhead annunciator in the control room were A-23 (2A 125VDC Control Bus Low Voltage) and J-17 (2A 4KV Vital Bus Under Voltage). Technical Specification Action Statement 3.8.2.2 was entered at this time. The SEC actuation was inadvertently initiated while performing testing. 2A Vital Bus was re-energized and the loads were restored. Technical Specification Action Statement 3.8.2.2 was terminated at 1431 hours, December 7, 1983.

APPARENT CAUSE OF OCCURRENCE:

Problems have been previously encountered with 2A SEC spurious actuations (see LERs 83-014/03L, 83-025/03L, 83-031/03L, and 83-041/03L). Due to these events, extensive testing has been performed to determine the cause. On December 7, 1983, testing was in progress under the direction of a member from the Engineering Department. In accordance with Design Change Request (DCR) 2EX-1651, Revision 8, various voltages were being observed within 2A SEC with the use of a dual-trace memory oscilloscope and a Dranetz Recorder. One channel of the scope was connected between pin 22 of card 54 and the 15VDC supply at Dranetz input 2-8 on the SEC side of the dividing resistors. The test engineer instructed the electrician to connect the other channel of the scope across the coil of Relay XK-49. When the connection was made to the ground side of the relay (Terminal A), the relay actuated along with the other relays (XK-46 through XK-55) which are connected in parallel with XK-49. The actuation of these relays resulted in the stripping of the 2A Vital Bus loads and the de-energization of the bus. The relays were actuated because a circuit was completed (through ground) due to reversal of the scope leads when the connection was made to the relay. This was not a spurious actuation due to unknown causes; the SEC performed as designed, under these conditions.

APPARENT CAUSE OF OCCURRENCE: (cont'd)

Although unrelated, this is the second time that the 2A SEC has been actuated while performing testing. The first event occurred on August 30, 1983, when the SEC was actuated while making voltage measurements. The previous event was not due to personnel error; the loading effect of the instrument on the circuit caused a spurious actuation. This event was documented in LER 83-047/03L.

ANALYSIS OF OCCURRENCE:

The operability of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown ensures that the facility can be maintained in the shutdown condition for extended time periods, and sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

Technical Specification 3.8.2.2 requires two (2) A.C. electrical bus trains to be operable and energized from sources of power other than a diesel generator but aligned to an operable diesel generator. Each train shall consist of:

- 1 - 4KV Vital Bus
- 1 - 460 volt Vital Bus and associated control centers
- 1 - 230 volt Vital Bus and associated control centers
- 1 - 115 volt Instrument Bus, energized from its respective inverter with the inverter connected to its respective D.C. Bus Train.

Action Statement 3.8.2.2 states:

With less than the above complement of A.C. busses and inverters operable and energized, establish containment integrity within 8 hours.

When 2A Vital bus was de-energized, Technical Specification Action Statement 3.8.2.2 was appropriately entered because 2B Diesel Generator was inoperable at the time. Maintenance was being performed on 2B Diesel Generator due to a voltage regulator failure. This event was documented in LER 83-065/03L. 2B and 2C Vital Busses remained energized throughout the occurrence, providing redundant safety-related equipment and instrumentation. 2A Vital Bus and associated loads were restored in a timely fashion, and the event involved no undue risk to the health or safety of the public. Because the event constituted operation in a degraded mode permitted by a limiting condition for operation, the occurrence is reportable in accordance with Technical Specification 6.9.1.9.b.

CORRECTIVE ACTION:

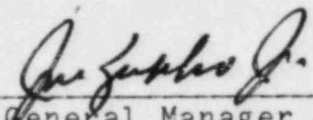
The cause of the SEC actuation was immediately determined. Testing was terminated, and the bus was restored to service in 47 minutes. The procedure was reviewed for accuracy; it was determined to be correct. Due to oversight, the polarity of the leads were not checked prior to making the connection. The personnel involved were counseled, and directed to proceed with caution while performing testing.

FAILURE DATA:

Nct Applicable

Prepared By J. Rupp

SORC Meeting No. 83-156



General Manager -
Salem Operations